

Date: Monday, 11/08/2008 2:45:22 PM
 User: Linda Lacelle

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	350 SKIDTUBE EXTRUSION (BENT)
Job Number :	41122		
Estimate Number :	10997		
P.O. Number :		Part Number :	D26003BENT
This Issue :	11/08/2008	S.O. No. :	
Prsht Rev. :	NC	Drawing Number :	D2600 D1/D2750 E
First Issue :	/ /	Project Number :	N/A
Previous Run :	39714	Drawing Revision :	D1/E
	Type :	Material :	
	MACHINED PARTS	Due Date :	15/08/2008
Written By :		Qty:	20
Checked & Approved By :	JLD 08.8.11	Um:	Each
Comment :	Est. B02.11.28 Reformat KJ		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D26003120	Extrusion Round 3" 350
-----	-----------	------------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 20.0000 Each(s)

Extrusion Bent

Pick:

Qty	Part Number	Description	Batch
1	D2600-3	Extrusion	37756

2T 08-08-13 (x20)

2.0	BENDING	BENDING MACHINE - SKIDTUBES
-----	---------	-----------------------------

**Comment:** BENDING MACHINE

Deburr one end of extrusion

Drill #30 pilot holes using DT8689

Open holes to 5/16" and deburr

Bend using CNC bending machine as per program 2750.C and Folio FT003.

Use 5/16 locator pin on buggy "A".

Check fit to Jig DT8150

2T 08-08-13

3.0	QC5	INSPECT WORK TO CURRENT STEP
-----	-----	------------------------------

**Comment:** INSPECT WORK TO CURRENT STEP

Inspect work to Step 6 Ensure fit to Jig DT8150

S00/00/13 (x18)

4.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------

**Comment:** PACKAGING RESOURCE #1

Identify and Stock


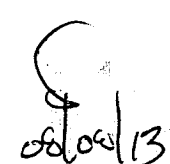

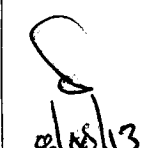

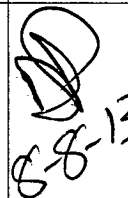
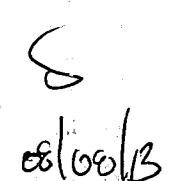

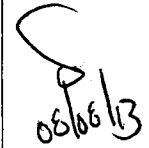
Location: Skid tube all

2T 08-08-13

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2600-3B PAR #: _____ Fault Category: Prod / x-tube NCR: (Yes) No DQA: D Date: 08/08/15
 QA: N/C Closed: D Date: 08/08/15

NCR: <u>41122</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
8/2/13	4 20	two tubes scrap. 1- Bend is too close to the aft end of tube. 2- tube didn't seal		Scrap and Destroy and no replace Qty (x2) B# 37756.	RT 08-08-13			
		1- tube was crushed crushed R.C both are a machine malfunction		call / inform touring of problems with bendure				

NOTE: Date & initial all entries

Date: Monday, 11/08/2008 2:45:22 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE EXTRUSION (BENT)

Job Number: 41122

Part Number: D26003BENT

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC21

FINAL INSPECTION/W/O RELEASE



18

Comment: FINAL INSPECTION/W/O RELEASE

D 08/08/15

Job Completion



MF 08-08-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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CHECKED <i>KE</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2600	REV. D SHEET 1 OF 5
DATE 98.08.20		TITLE EXTRUSION	SCALE 1:1
A	97.01.21	NEW ISSUE	
B	97.09.09	CHANGE MATERIAL SPEC.	
C	98.04.16	ADD D2600-3, UPDATE D2600-1 WIDTH, ADD DIE NO.	
D	98.08.20	INCREASE MIN. UTS TO 40 KSI	
DI	01.04.17	ADD PART NUMBERS + DIE NUMBERS <i>FCP</i>	

RELEASED
98.08.25 DS

GENERAL NOTES

- MATERIAL: 6061-T6 (QQ-A-200/8)

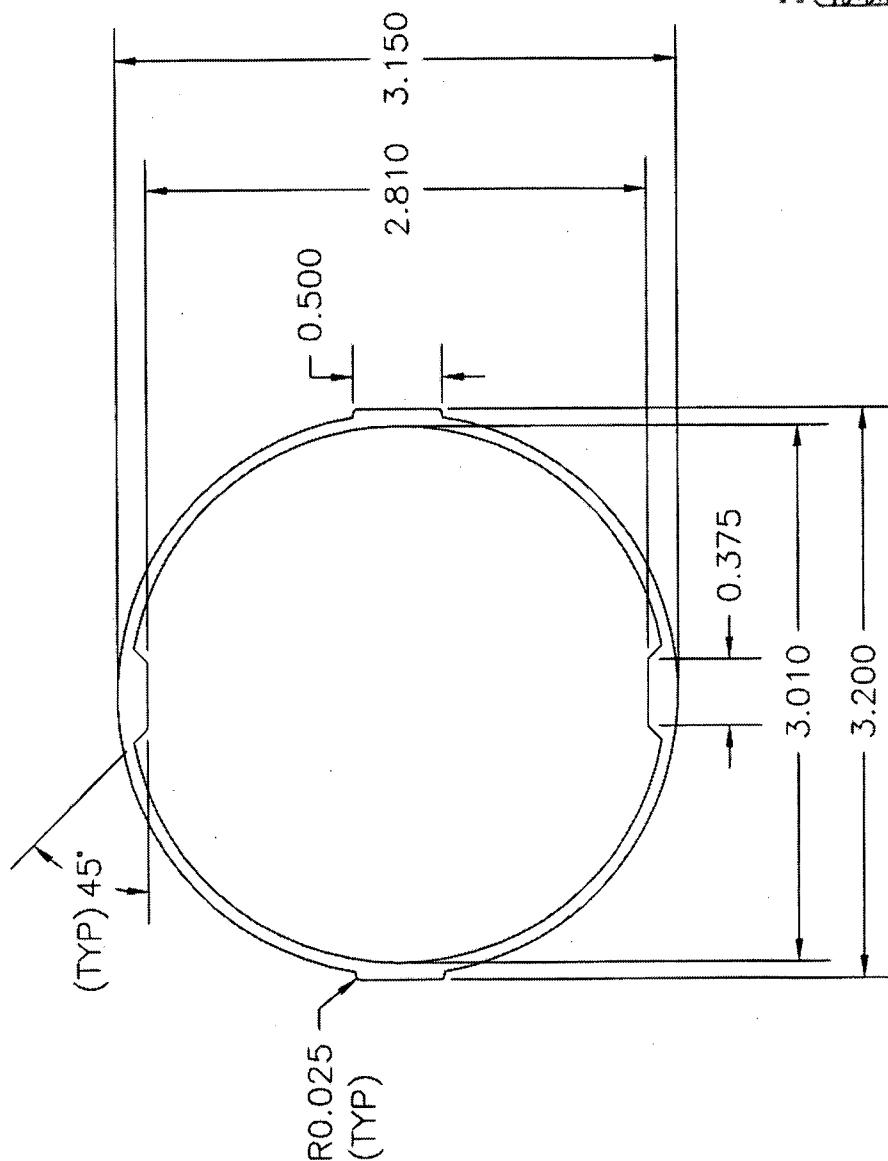
MINIMUM YIELD TENSILE STRENGTH = 35 ksi
MINIMUM ULTIMATE TENSILE STRENGTH = 40 ksi
MINIMUM ELONGATION = 8 %

A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES.
- BREAK ALL SHARP CORNERS 0.010 MAX.
- NO TOOLING MARKS.
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE IN INCHES.

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D2600-1

MANUFACTURED WITH CARADON INDALEX DIE # MH-18870
OR BON L DIE # 897121 (PREFERRED CHOICE)
PART NUMBER IS D2600-1-XXX WHERE XXX IS CUT LENGTH IN INCHES (EG. D2600

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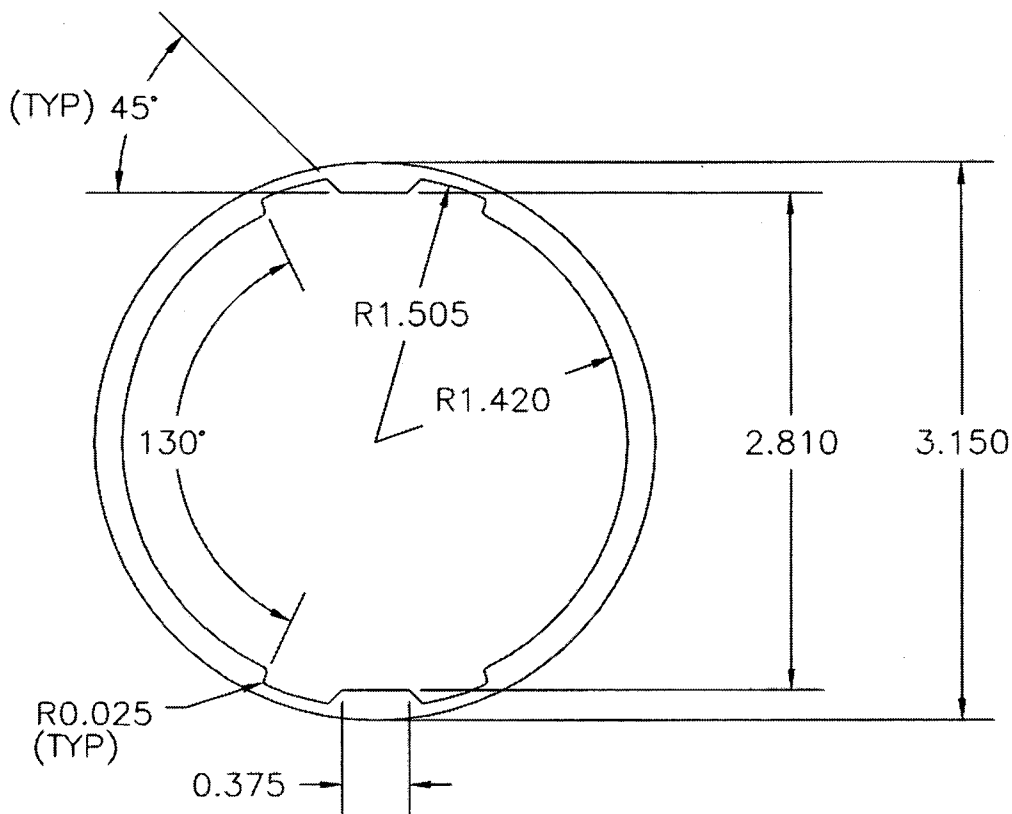
NC

DART



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DATE	98.08.20	TITLE	EXTRUSION	REV. D SHEET 3 OF 5
				SCALE 1:1

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D2600-3

MANUFACTURED WITH CARADON INDALEX DIE # MH-18859

OR BON L DIE # 897122 (PREFERRED CHOICE)

PART NUMBER IS D2600-3-XXX WHERE XXX IS CUT LENGTH IN INCHES (EG. D2600-3-120 IS 120" LONG)

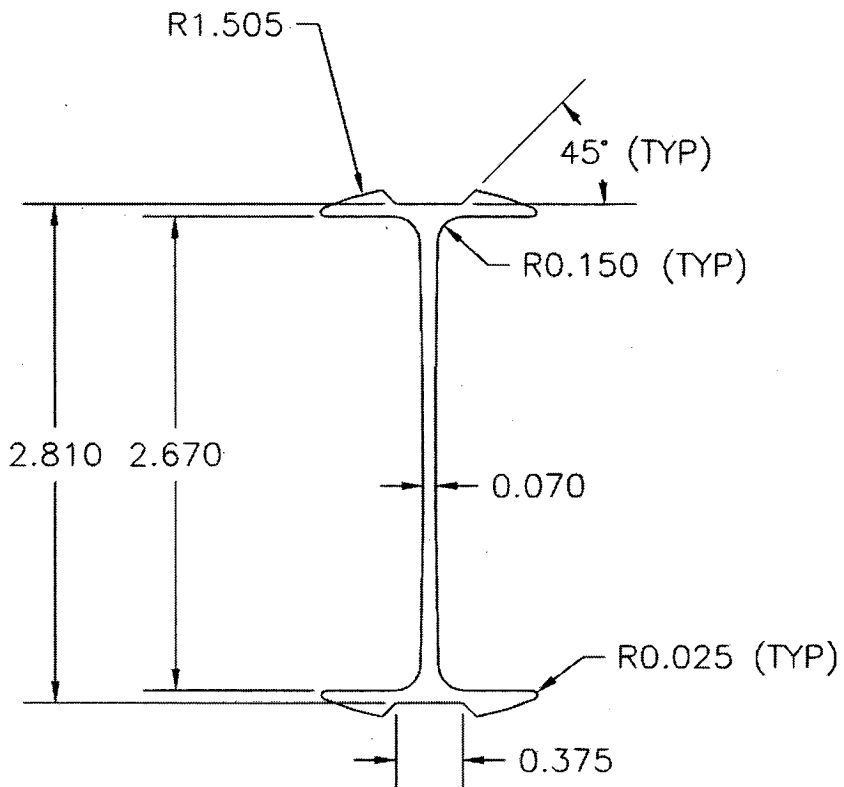


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DATE 98.08.20	TITLE EXTRUSION	SCALE 1:1	

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D2600-5

MANUFACTURED WITH CARADON INDALEX DIE # MS-18871

PART NUMBER IS D2600-5-XXX WHERE XXX IS CUT LENGTH IN INCHES
(EG. D2600-5-108 IS 108" LONG)



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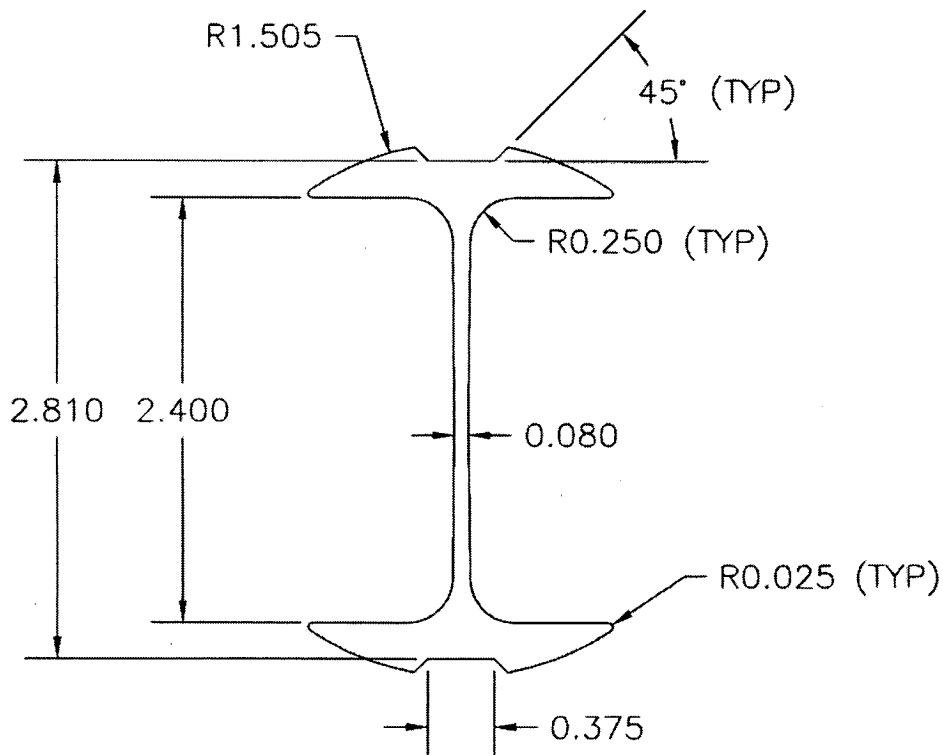
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DATE 98.08.20	TITLE EXTRUSION	REV. 0 SHEET 5 OF 5 SCALE 1:1

RELEASED
98.8.25 NS



D2600-7

MANUFACTURED WITH CARADON INDALEX DIE # MS-18872

PART NUMBER IS D2600-7-XXX WHERE XXX IS CUT LENGTH IN INCHES
(EG. D2600-7-125 IS 125" LONG)



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DATE 07.05.17		TITLE 350 SKIDTUBE ASSEMBLY SCALE NTS	
REV	DATE	DESCRIPTION	
A	98.04.16	NEW ISSUE	
B	98.09.01	CHANGE MS24694-S293 TO AN8-16A	
C	98.11.18	ADD D2750-3 / D2750-4; INCORPORATE D2738 AND D2740	
D	06.01.05	ADD HOLES AND SPACERS FOR APICAL FLOATS INCORPORATE DEO 9133 / 9157	
E	07.05.17	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY(38) NAS1515H3L; REMOVE QTY(10) NAS1515H8L; REMOVE D2741, QTY(2) AN960C816; REMOVE QTY(2) MS21083C8	

RELEASED
07.08.02

Qty -041	Qty -042	Qty -043	Qty -044	Part Number	Description
X				D2750-041	SKIDTUBE ASSEMBLY, LH
	X			D2750-042	SKIDTUBE ASSEMBLY, RH
		X		D2750-043	SKIDTUBE ASSEMBLY, LH
			X	D2750-044	SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-13	WEARSHOE
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3535-35	WEARSHOE
1	1	1	1	D3536-13	GASKET
1	1	1	1	D3536-25	GASKET
1	1	1	1	D3536-35	GASKET
5	5	5	5	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
42	42	42	42	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
38	38	38	38	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN3C7A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
46	46	46	46	AN960C10L	WASHER
2	2	2	2	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER
2	2	2	2	NAS1515H8L	WASHER

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CHECKED PH	APPROVED [Signature]	DRAWING NO. D2750	REV. E SHEET 2 OF 5
DATE 07.05.17		TITLE 350 SKIDTUBE ASSEMBLY	SCALE NTS

GENERAL NOTES:

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07-08-02 [Signature]

1. ALL DIMENSIONS ARE IN INCHES.
2. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
3. MAKE FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
4. DAMAGE TOLERANCE ON BENDING:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 12 INCHES ABOVE THE GROUND. NO GOUGING IS ACCEPTABLE IN THE FLAT PORTION OF THE TUBE. GOUGES UP TO 0.020 ARE ACCEPTABLE IN THE BENT PORTION OF THE TUBE. TUBE O.D. SHOULD BE 3.150 ± 0.010 IN THE FLAT PORTION OF THE TUBE. TUBE O.D. SHOULD BE 3.15 ± 0.030 IN THE BENT PORTION OF THE TUBE.
5. ALL HOLES DRILLED ON CENTERLINES EXCEPT THOSE NOTED BY SECTIONS C-C, D-D AND F-F.
6. WELDING TO BE DONE PER DART QSI 004.
7. FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 ksi
MINIMUM ULTIMATE TENSILE STRENGTH = 38 ksi
8. FINISH:
ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
9. INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED IN D2750-1/-2/-3/-4 WELDING DETAIL ON PAGE 4 AND 5. DRILL 'F' SIZE HOLES ($\emptyset 0.297$) FOR WEARSHOE INSERTS.
10. D3488-041 (OR D3488-042) BLADE FITTING AND AN3C5A/AN3C7A WEARSHOE BOLTS TO BE INSTALLED USING SIKAFLEX-241 (OR EQUIVALENT) SEALANT.
11. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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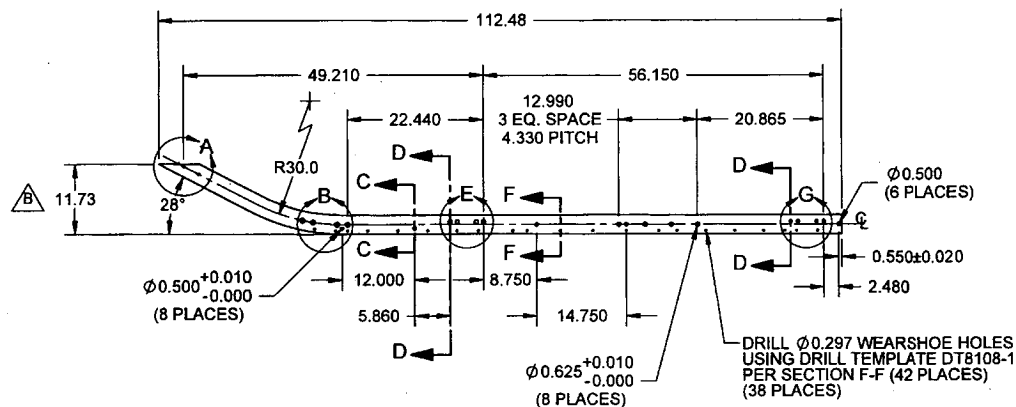
WORK ORDER

NO. 4620

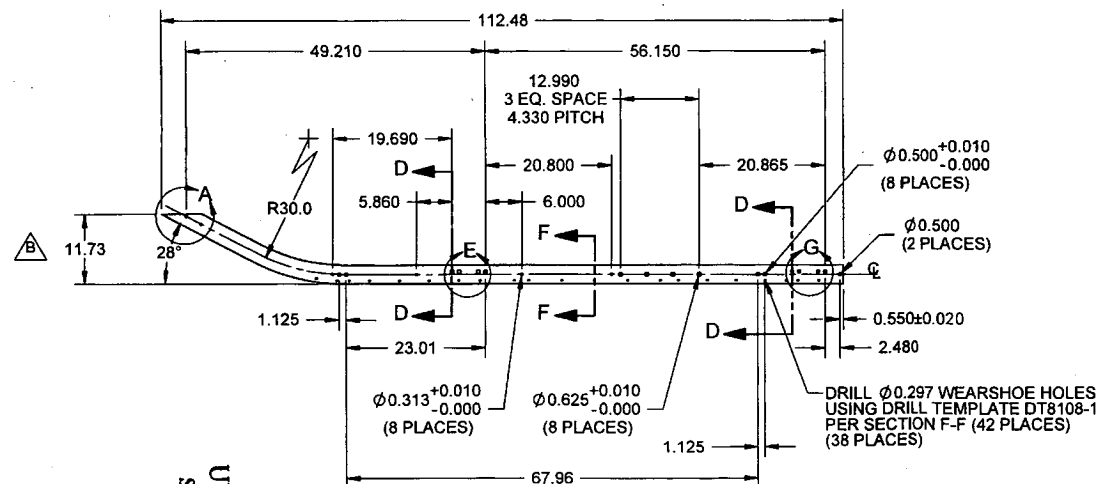
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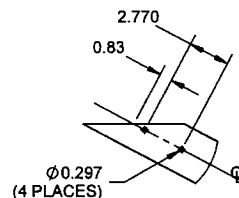
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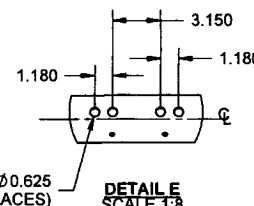
D2750-1 LH SKIDTUBE (SHOWN)
D2750-2 RH SKIDTUBE (OPPOSITE)



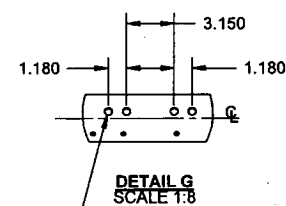
D2750-3 LH SKIDTUBE (SHOWN)
D2750-4 RH SKIDTUBE (OPPOSITE)



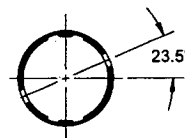
DETAIL A
SCALE 1:8



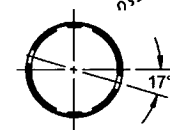
DETAIL E
SCALE 1:8



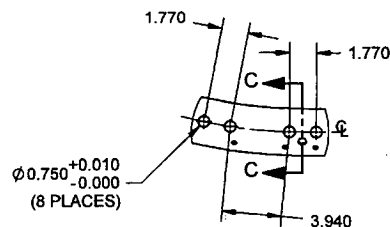
DETAIL G
SCALE 1:8



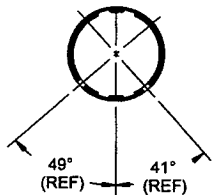
SECTION C-C
SCALE 1:4



SECTION D-D
SCALE 1:4



DETAIL B
SCALE 1:8
(ALL DIMENSIONS ARE
STRAIGHT LINE DIMENSIONS)



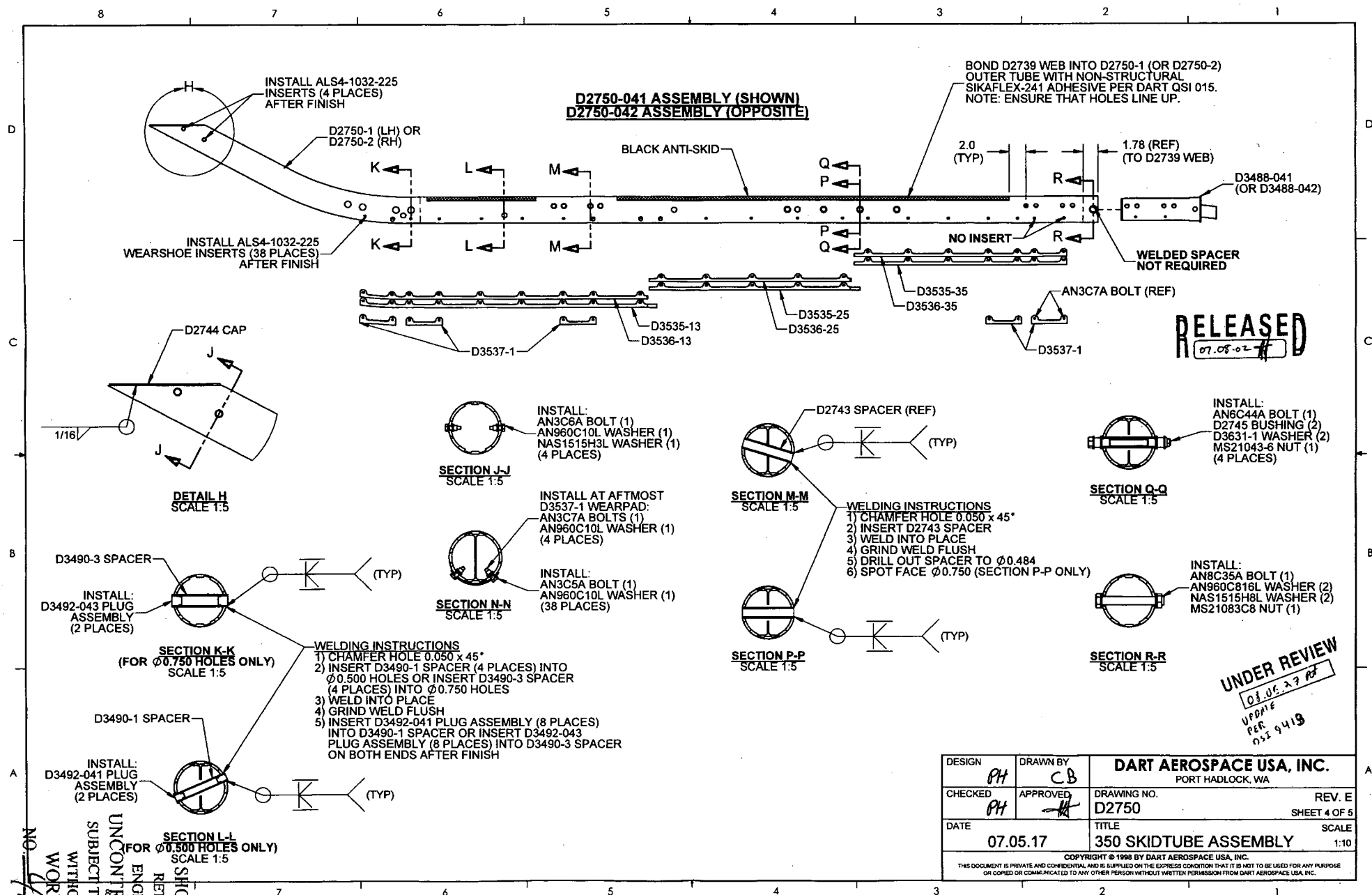
SECTION F-F
SCALE 1:4

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DATE 07.05.17	TITLE 350 SKIDTUBE ASSEMBLY SCALE 1:20		

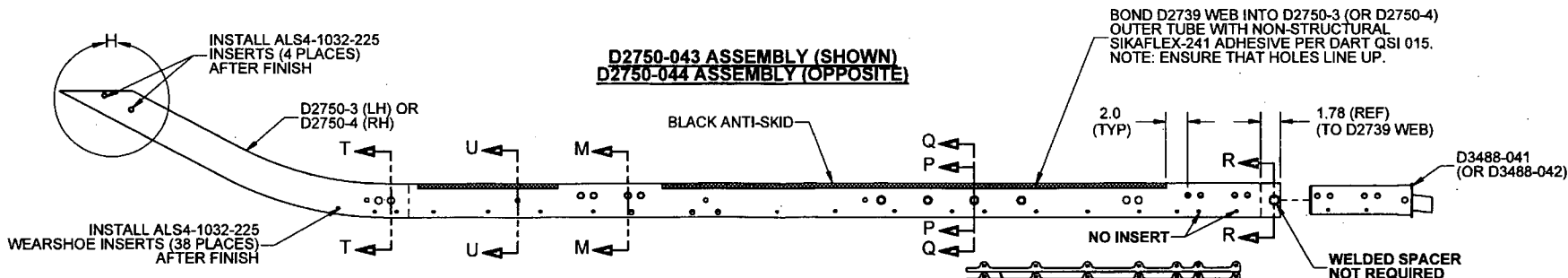
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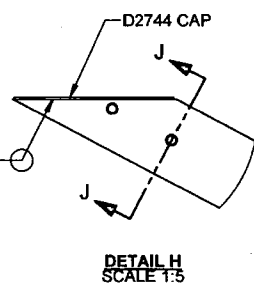
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8 7 6 5 4 3 2 1



**D2750-043 ASSEMBLY (SHOWN)
D2750-044 ASSEMBLY (OPPOSITE)**

RELEASED
07.08.02



UNDER REVIEW
01.05.03
UPDATE
PER
DSI 9419

**SECTION J-J
SCALE 1:5**
INSTALL:
AN3C8A BOLT (1)
AN960C10L WASHER (1)
NAS1515H3L WASHER (1)
(4 PLACES)

**SECTION M-M
SCALE 1:5**
INSTALL AT AFTMOST
D3537-1 WEARPAD:
AN3C7A BOLTS (1)
AN960C10L WASHER (1)
(4 PLACES)

**SECTION N-N
SCALE 1:5**
INSTALL:
AN3C5A BOLT (1)
AN960C10L WASHER (1)
(38 PLACES)

**SECTION M-M
SCALE 1:5**
D2743 SPACER (REF)
(TYP)

**SECTION P-P
SCALE 1:5**
(TYP)

**SECTION Q-Q
SCALE 1:5**
INSTALL:
AN8C44A BOLT (1)
D2745 BUSHING (2)
D3631-1 WASHER (2)
MS21043-6 NUT (1)
(4 PLACES)

**SECTION R-R
SCALE 1:5**
INSTALL:
AN8C35A BOLT (1)
AN960C816L WASHER (2)
NAS1515H8L WASHER (2)
MS21083C8 NUT (1)

UNDER REVIEW
01.05.03
UPDATE
PER
DSI 9419

- WELDING INSTRUCTIONS**
- 1) CHAMFER HOLE 0.050 x 45°
 - 2) INSERT D2743 SPACER
 - 3) WELD INTO PLACE
 - 4) GRIND WELD FLUSH
 - 5) DRILL OUT SPACER TO $\phi 0.484$
 - 6) SPOT FACE $\phi 0.750$ (SECTION P-P ONLY)

- WELDING INSTRUCTIONS**
- 1) CHAMFER HOLE 0.050 x 45°
 - 2) INSERT D3490-5 SPACER (4 PLACES) INTO $\phi 0.313$ HOLES OR INSERT D3490-1 SPACER (4 PLACES) INTO $\phi 0.500$ HOLES
 - 3) WELD INTO PLACE
 - 4) GRIND WELD FLUSH
 - 5) INSERT D3492-045 PLUG ASSEMBLY (8 PLACES) INTO D3490-5 SPACER OR INSERT D3492-043 PLUG ASSEMBLY (8 PLACES) INTO D3490-1 SPACER ON BOTH ENDS AFTER FINISH

**SECTION T-T
(FOR $\phi 0.500$ HOLES ONLY)
SCALE 1:5**

**SECTION U-U
(FOR $\phi 0.313$ HOLES ONLY)
SCALE 1:5**

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DATE 07.05.17	TITLE 350 SKIDTUBE ASSEMBLY		SCALE 1:10
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